MASTER

# Operating Instructions

## STEREO CASSETTE TAPE DECK RECEIVER
## RX-322
## STEREO TURNTABLE
## PL-222Z/PL-322AZ
## PL-322Z

English

中国文

Español

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

## IMPORTANT NOTICE

### [For U.S. and Canadian models]

**The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.**

### [For Canadian models]

**CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED)PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.**

**ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.**

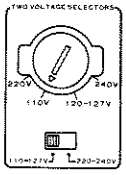
## TWO VOLTAGE SELECTOR SWITCHES

**Only multi-voltage models are provided with these switches. U.S. and Canadian models are not provided with these switches. Mains voltages in Saudi Arabia are 127V and 220V only. Never use this model with 110V setting in Saudi Arabia.**

The line voltage selector switches are on the rear panel. Before your model is shipped from the factory, these switches are set to the power requirements of the destination. Check they are set properly before plugging the power cord into the household wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switches as follows.

1. Use a medium-size screwdriver.
2. First, insert a screwdriver into the groove of the voltage selector at the top, and adjust so that tip of the groove points to the voltage value of your area
3. Next, insert the screwdriver into the groove of the voltage selector at the bottom and adjust until the voltage is the same as at the top.

*Both switches must be in the same switch setting.*

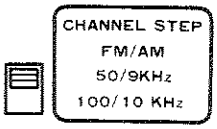



## CHANNEL STEP SWITCH

Only multi-voltage models are provided with this switch.
U.S. and Canadian models are not provided with this switch. (This switch is on the rear panel.)
The unit has been factory preset to the channel allocation for the area in which it is to be sold. If the value is set incorrectly, the frequency display may stop at the wrong frequency, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality.
For this reason, be sure to confirm that the value is set correctly before first using the unit.

**[100 kHz/10 kHz] position:**
Set to this position for areas with FM reception step of 100 kHz, AM 10 kHz.

**[50 kHz/9 kHz] position:**
Set to this position for areas with FM reception step of 50 kHz, AM 9 kHz.




*When unsure about the channel allocation for your area, consult your dealer for correct information.*

## CONTENTS


CHECKING ACCESSORY ITEMS ..... 3
BEFORE OPERATION ..... 3
ANTENNA CONNECTIONS ..... 3
CONNECTIONS ..... 4
SURROUND SYSTEM ..... 6
PANEL FACILITIES ..... 7
REMOTE CONTROL UNIT FACILITIES ..... 9
TURNTABLE FACILITIES ..... 10
GRAPHIC EQUALIZER CONTROLS ..... 10
PRELIMINARY OPERATIONS ..... 10
BASIC OPERATIONS ..... 11
TAPE COPYING ..... 13
RECORDING AND PLAYBACK
USING THE OPTIONAL AUDIO TIMER ..... 14
MAINTENANCE ..... 14
TROUBLESHOOTING ..... 15
SPECIFICATIONS ..... 16
HOW TO HANDLE CASSETTE TAPES ..... 17


PIONEER®
The future of sound and vision.

# IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

**CAUTION:**
**TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# SAFETY INSTRUCTIONS

**READ INSTRUCTIONS** — All the safety and operating instructions should be read before the appliance is operated.

**RETAIN INSTRUCTIONS** — The operating instructions should be retained for future reference.

**HEED WARNING** — All warnings on the appliance and in the operating instructions should be adhered to.

**FOLLOW INSTRUCTIONS** — All operating and use instructions should be followed.

**WATER AND MOISTURE** — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

**LOCATION** — The appliance should be installed in a stable location.

**WALL OR CEILING MOUNTING** — The appliance should not be mounted to a wall or ceiling.

**VENTILATION** — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

**HEAT** — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

**POWER SOURCES** — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**POWER-CORD PROTECTION** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

**POLARIZATION** — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

**CLEANING** — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

**POWER LINES** — An outdoor antenna should be located away from power lines.

**NONUSE PERIODS** — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

**OBJECT AND LIQUID ENTRY** — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**DAMAGE REQUIRING SERVICE** — The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

**SERVICING** — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

**OUTDOOR ANTENNA GROUNDING** — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

**CART** — An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

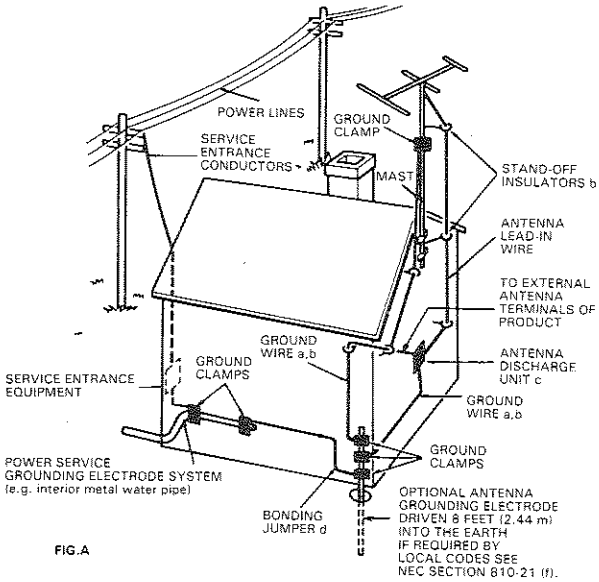

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND-OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
GROUND CLAMPS
ANTENNA DISCHARGE UNIT c
SERVICE ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
BONDING JUMPER d
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f).

FIG.A

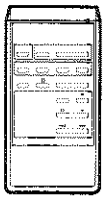
a) Use No.10 AWG (5.3 mm²) copper, No.8 AWG (8.4 mm²) aluminum, No.17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.

b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

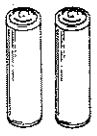
c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).

# CHECKING ACCESSORY ITEMS



• Remote Control Unit



• Size "AAA" (IEC R03) 1.5V (UM-4) dry cell batteries

• AM Loop Antenna

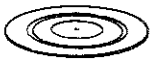
• FM T-type Antenna

# BEFORE OPERATION

## [TURNTABLE PL-222Z, PL-322Z, PL-322AZ] INITIAL TURNTABLE SET-UP

1. **Check the parts.**

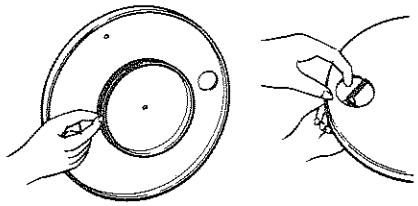
EP adaptor
(You will find this taped on the cabinet)



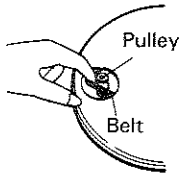
Platter mat

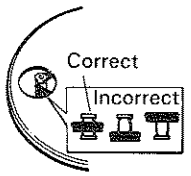
Platter

2. **Pull dust cover up and off of rear hinges. (PL-222Z, PL-322Z)**
3. **Turn over platter.**
4. **Pinch the belt on inner rim between thumb and forefinger.**

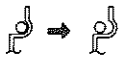


5. **Slip the belt over forefinger and pull out, inserting forefinger in hole.**
6. **Insert forefinger from top of the platter and transfer the belt to forefinger.**
7. **Lower the platter onto the spindle.**
8. **Release belt onto pulley.**




9. **Place the platter mat on the platter. (with "PIONEER" side up)**
10. **Remove the vinyl band holding the tonearm.**
11. **Remove the tonearm from the arm rest.**



12. **Remove the stylus cover.**

# ANTENNA CONNECTIONS

## RADIO RECEPTION IS NOT POSSIBLE UNLESS THE ANTENNA IS PROPERLY CONNECTED.

The strength of broadcast signal varies from one area to another (signal propagation is especially poor in metropolitan areas, where there are may tall buildings, and in mountainous areas). Proper antenna installation is vital to good reception.

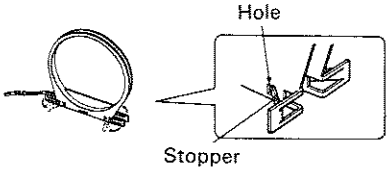
## AM ANTENNA

The AM Loop Antenna supplied with the cassette deck receiver should be connected to the AM antenna terminals. The antenna should be placed at a distance from the cassette deck receiver, and should not be allowed to touch metallic objects. Avoid placing it near CD players, personal computers,television sets, and other devices generating radio frequencies.

### Setting up the AM antenna

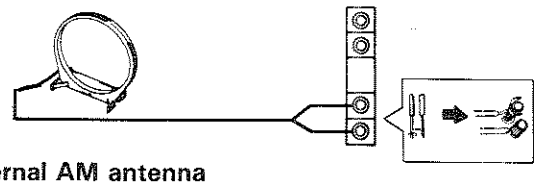
- Fold out the supports on the bottom of the antenna. Insert the stopper in the hole in the antenna to lock them in place.
- Place the antenna on a level surface and rotate it to locate the orientation that yields the best reception.

**AM Loop Antenna Set-up**




**AM Loop Antenna Connection**

The accessory AM loop antenna must be connected to ensure proper reception.



### External AM antenna

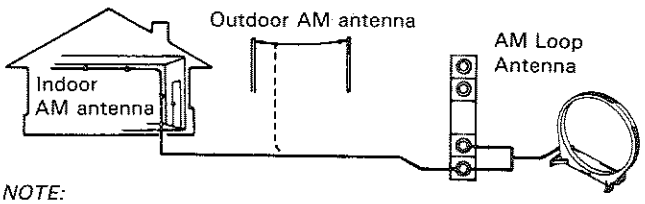
**Indoor AM antenna**

Provide a vinyl-coated wire (5 to 6 meters long). Secure one end to the AM terminal and the other end to a wall or other high location.

**Outdoor AM antenna**

If reception is still poor even when a lead antenna has been stretched out indoors, stretch out a vinyl-coated wire and secure it outdoors.

**Connecting the external AM antenna**

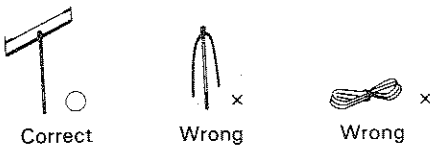



*NOTE:*
*Do not detach the AM Loop Antenna when using the external AM antenna.*

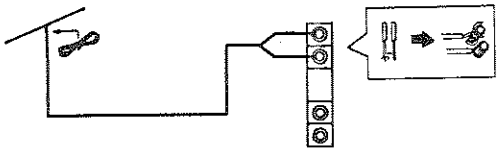
## FM ANTENNA

### FM T-type antenna attachment

Connect the accessory FM T-type antenna to the FM terminals. Stretch the antenna out to its full length, and affix it to a wall, etc.
Stretch out both ends.



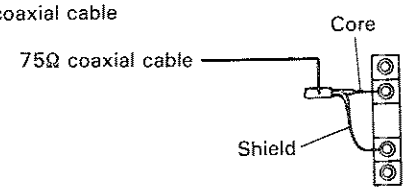

The accessory FM T-type antenna must be connect to ensure proper reception.



### External FM antenna installation

Use an external antenna when the signals from the station are weak and cannot be picked up by the accessory FM T-type antenna, or when the sound is accompanied by large amounts of noise. There are two ways of connecting the external FM antenna to the ANTENNA terminals with 300Ω feeder wire, or with a 75Ω coaxial cable.
It is recommended that you use the 75Ω coaxial cable, so that the effects of extraneous noise are reduced to a minimum.

When the connecting cable is a 75Ω coaxial cable




When the connecting cable is a 300Ω feeder wire

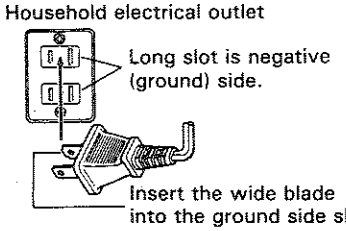
# CONNECTIONS

Proceed as follows with the set-up and connections

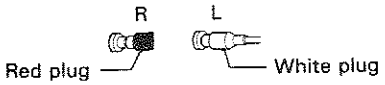
1. Connect the FM antenna and the AM antenna to the cassette tape deck receiver's ANTENNA terminals. (See page 3~4)
   (Use an antenna ground as necessary. See page 5.)
2. Connect the turntable's cords to the cassette tape deck receiver's TURNTABLE jacks. If any other stereo component is used, connect in the same way to the cassette tape deck receiver's input (and output) jacks.
3. Connect the speaker cords to the SPEAKERS terminals.
4. Finally, connect the power cord to the AC wall socket.

### CONNECTING THE POWER CORD (For U.S. and Canadian models)

Household electrical outlets are provided with specific polarity, a positive side and a negative (ground) side. This unit utilizes such polarity in order to improve sound quality. As shown in the illustration, be sure to insert the power plug so that its blades match the width of slots in the outlet.



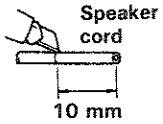

### Connecting the input/output cords



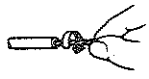

- Connect the plugs properly. Faulty connections can cause noise and also breakdowns and failures.
- The white terminal is for the left channel and the red terminal is for the right channel.

### Connecting the speaker cords.

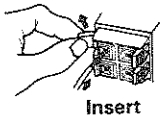
1. Cutter



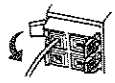

2. Twist the strands.

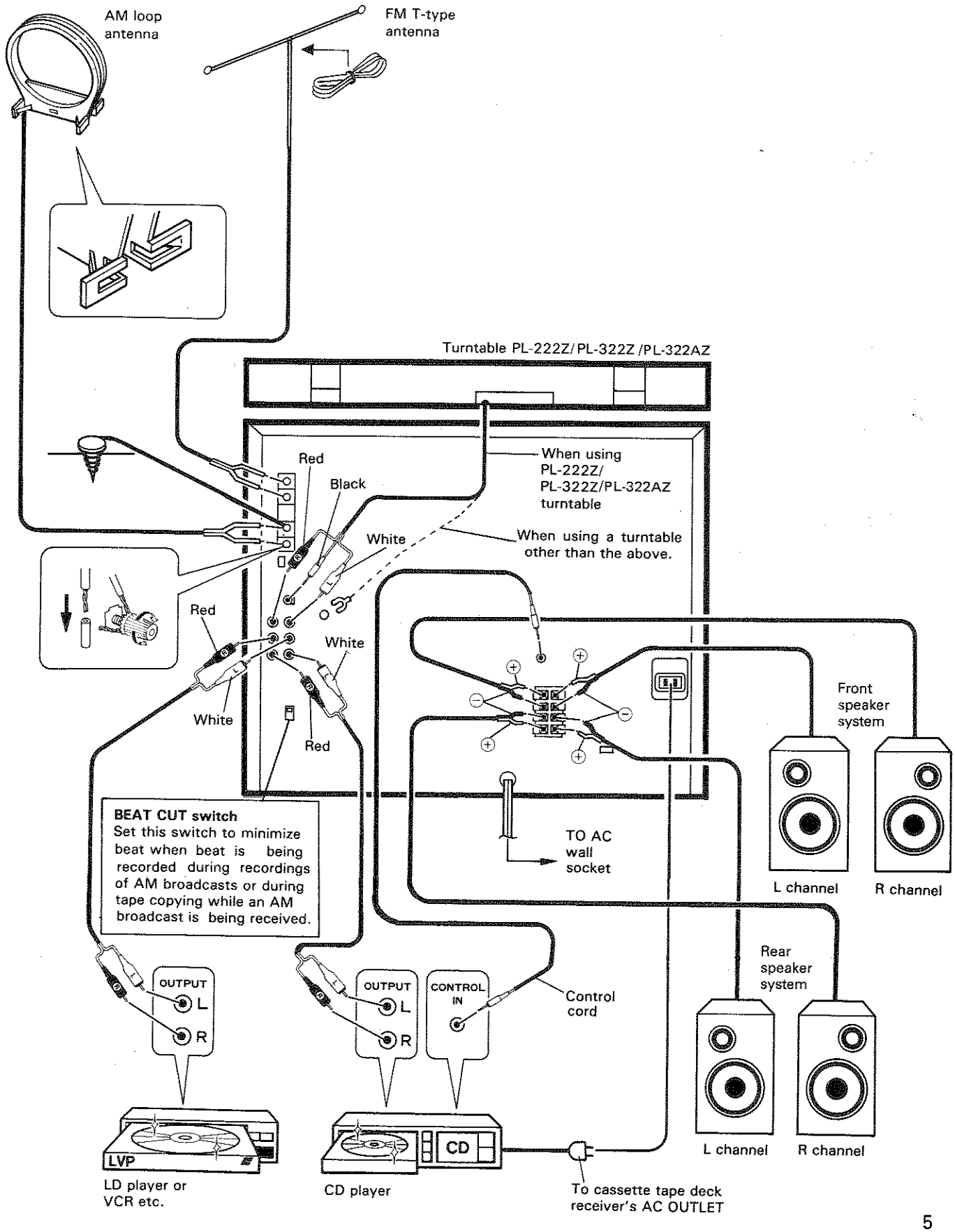


3. Push the lever toward the outside




4. Pull the lever toward the inside




AM loop antenna
FM T-type antenna
Turntable PL-222Z/PL-322Z/PL-322AZ
Red
Black
White
When using PL-222Z/ PL-322Z/PL-322AZ turntable
When using a turntable other than the above.
Red
White
White
Red
BEAT CUT switch
Set this switch to minimize beat when beat is being recorded during recordings of AM broadcasts or during tape copying while an AM broadcast is being received.
TO AC wall socket
Front speaker system
L channel
R channel
Rear speaker system
L channel
R channel
OUTPUT
L
R
OUTPUT
L
R
CONTROL IN
Control cord
LVP
CD
LD player or VCR etc.
CD player
To cassette tape deck receiver's AC OUTLET

### Antenna ground (GND)

Although grounding is not necessary for reception, it is recommended for protection against damage from lightning for an outdoor FM antenna. Grounding is recommended as well to help to reduce noise and hum.

*NOTE:*

*Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.*

### NOTE ABOUT SPEAKER CONNECTIONS

- Speaker systems used should have an impedance from 8Ω to 16Ω.
- Be sure that connections are secure. Check to make sure that wires do not protrude from their terminals.
- Do not allow the speaker cords to become shorted. Otherwise damage may result to your equipment.

### AC OUTLET SWITCHED 100W MAX

Power supplied through this outlet is turned on and off by this equipment's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

*NOTE:*

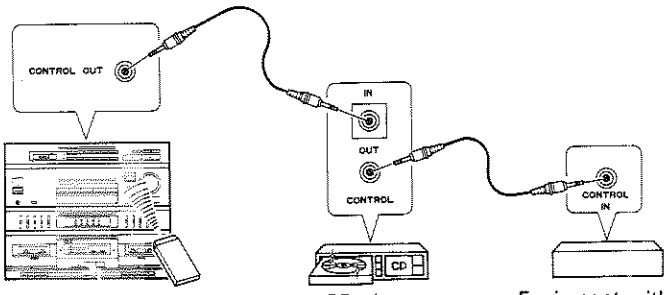
*Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET, in order to avoid overheating or fire risk.*

*This can cause this equipment to malfunction.*

### To control a unit other than this receiver using the remote control unit.

① In the case of a PIONEER equipment marked SR which is provided with a remote sensor, operate the equipment by aiming the remote control unit at the remote sensor on the equipment.

② For equipment with the SR mark, but without a remote sensor, operation of the equipment by facing the remote control unit towards the remote sensor of the cassette deck receiver possible with connection from the CONTROL OUT jack to the CONTROL IN jack. Use a commercially available cable with mini-plugs for the connection.




Cassette tape deck receiver | CD player | Equipment with the SR mark

# SURROUND SYSTEM

### What is surround sound?

With ordinary stereo, sound normally comes only from speakers in front of the listener. In a concert hall or theater though, sound reflected from the walls and ceiling reaches the listener from all directions. This is what accounts for the feeling of ambience or spaciousness of a live performance.

Surround sound works to reproduce these effects to produce fuller, more "live" sound.

### Speaker System Placement Examples

The sound effects obtained in a surround system depend on speaker placement. Experiment with various arrangements to find the one most suited to your tastes.

Placing the speakers so that they are slightly higher than ear level contributes to sound quality.

**[Case A]**

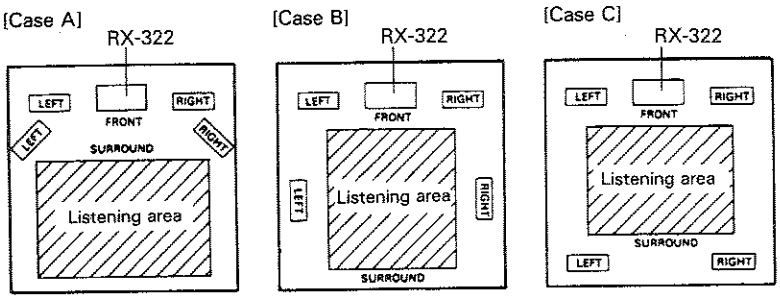
Good sound dispersion; recommended for movies, etc.

**[Case B]**

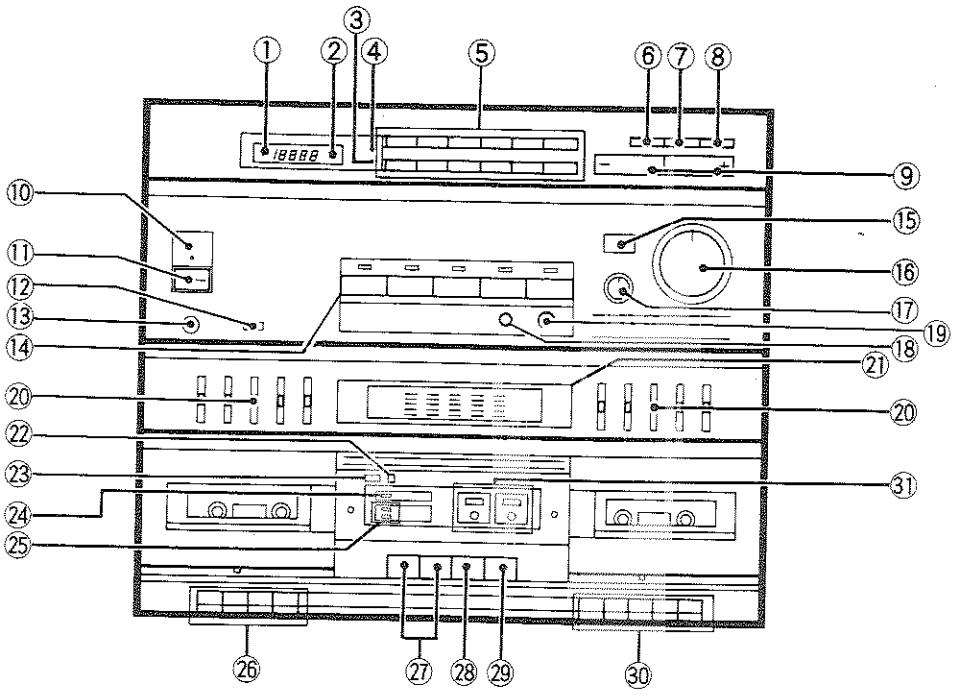
Sound appears to come from directly in front of listener. Good for listening to music recordings.

**[Case C]**

Offers most varied effects; good for watching sports programs or listening to live recordings.



# PANEL FACILITIES



## TUNER SECTION

### ① FREQUENCY/station number display

### ② FM MONO indicator
Lights when the FM MONO switch is pressed to select monaural FM reception.

### ③ STEREO indicator
This lights during FM stereo reception.

### ④ TUNED indicator
This lights to indicate that a station has been optimally tuned in.

### ⑤ STATION CALL switches
These are used to recall preset broadcasting stations and to preset the station.

### ⑥ MEMORY switch
This switch is used to memorize stations. When the switch is pressed, the FREQUENCY indicator will flash. To memorize the frequency of any station, press one of the STATION CALL switch while the frequency indicator is flashing.

### ⑦ FM MONO switch
Normally, the FM MONO indicator remains off. However, it may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press the switch to set the reception to the monaural mode (FM MONO indicator lights) and tune in the station. The program of an FM stereo broadcast will be heard in mono. This switch will not function for AM reception. The FM MONO setting is memorized along with station frequency when presetting a station.

### ⑧ BAND selector switch (FM/ AM)
This is used to select the band of the desired station. The bands change alternately each time the switch is pressed.

**FM reception**
**AM reception**

### ⑨ TUNING switch (−, +)
These are used to locate stations. Push the "−" switch to locate a station broadcasting on a lower frequency and the "+" switch to locate a station broadcasting on a higher frequency.

## AMPLIFIER SECTION

### ⑩ STANDBY/SLEEP indicator
This indicator lights in standby status or when the sleep timer function is operating when the power cord is connected to a power outlet.
When the SLEEP key on the remote control unit is pressed, the sleep function activated for approximately 60 minutes, then enters the standby mode. (The STANDBY/SLEEP indicator flashes faster as the end of the set time nears.)

### ⑪ POWER (STANDBY/ON) switch
When this switch is set to the ON position, the STANDBY/SLEEP indicator goes out and power is supplied to the main circuits of the cassette tape deck receiver. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet.
Disconnect the power cord from the power outlet when you do not plan to use the cassette tape deck receiver for a long period of time.

*The cassette tape deck receiver has a backup function, so it will return to the original status when the power cord is unplugged and soon again plugged into the power outlet.*

### ⑫ SURROUND & STEREO WIDE switch (■OFF, ▬ON)
When rear speaker systems are connected to the REAR SPEAKERS terminals at the rear: By turning this switch ON, you can enjoy surround reproduction.
When rear speaker systems are not connected: By turning this switch ON, you can enjoy STEREO WIDE reproduction with greater leftright spread.

*NOTE:*
- *In the case of a monaural source, a SURROUND & STEREO WIDE effect cannot be obtained.*

### ⑬ PHONES jack
This is a "standard plug-type jack" for headphones.
*NOTE:*
*Sound is not heard from the speakers when headphones are in use.*

### ⑭ FUNCTION switches/indicators
The indicators light for the specified functions. See page 10 for details

### ⑮ REMOTE SENSOR window

### ⑯ VOLUME control/indicator
The volume is increased when this control is turned clockwise, decreased when turned counterclockwise. When operating with the remote control unit, the control automatically turns clockwise when "+" is pressed, counterclockwise when "−" is pressed, and the indicator on the VOLUME control flashes rapidly.
The indicator also flashes when the muting function is operated by the remote control unit.

### ⑰ BALANCE control
Usually set this control to the central position. If turned counterclockwise, the volume of the right channel will decrease. If turned clockwise, the volume of the left channel will decrease.

### ⑱ MIC jack
Used to connect microphones equipped with standard plug.

### ⑲ MIXING LEVEL
Adjusts the volume of the microphone.
Increasing the microphone volume reduces the source volume.

## GRAPHIC EQUALIZER SECTION
See page 10 for details.

### ⑳ GRAPHIC EQUALIZER controls

### ㉑ SPECTRUM ANALYZER display

## CASSETTE TAPE DECK SECTION
- The cassette tape deck receiver is provided with an automatic tape selector function.
  Deck I . . . . . NORMAL/$CrO_2$, METAL
  Deck II . . . . . NORMAL/$CrO_2$

### ㉒ DECK I TAPE COUNTER RESET switch

### ㉓ DECK I TAPE COUNTER
3-digital display measures tape travel on deck I.

### ㉔ DOLBY NR indicator

### ㉕ COPY MODE indicators

### ㉖ Deck I switches
| | |
|---|---|
| ▶ (PLAY) . . . . . | Playback. |
| ◀◀ (REW) . . . . . | Rewind |
| ▶▶ (FF) . . . . . | Fast forward |
| ■/▲ (STOP/EJECT) . . . . | Stops tape travel. Ejects cassette if pressed when tape is stopped. |

### ㉗ COPY MODE switches
These switches are used to select the copy mode.
HIGH . . . . . High speed copying (double-speed, halftime copying)
NORMAL . . . . . Normal speed copying
*NOTE :*
*When the COPY MODE indicator is blinking (copy standby mode) the playback operation is not available for only DECK I or only DECK II, and the recording operation is not available for DECK II only.*

### ㉘ DOLBY *NR switch
Press to activate noise reduction system. Use to play back tapes recorded using Dolby B NR.
- Tapes recorded using Dolby B NR should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby B NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

*
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

### ㉙ DECK II PAUSE (❚❚) switch
This switch is used to temporarily stop the tape in deck II. The PAUSE indicator lights during the pause mode. The pause mode is cancelled when the switch is pressed again. The PAUSE switch will not function while copying a tape.

### ㉚ DECK II switches
| | |
|---|---|
| ● (REC) . . . . . | Set to the recording mode. |
| ▶ (PLAY) . . . . . | Playback |
| ◀◀ (REW) . . . . . | Rewind |
| ▶▶ (FF) . . . . . | Fast forward |
| ■/▲ (STOP/EJECT) . . . . | Stops tape travel. Ejects cassette if pressed when tape is stopped. |

### ㉛ DECK II MODE indicators
| | |
|---|---|
| REC (●) . . . . . | Lights during recordind |
| PAUSE (❚❚) . . . . . | Lights during the pause mode. |

## MIC MIXING

### MIXING KNOW-HOW
Mixing involves combining the signals from two input sources (a microphone and a tape, for example).

### SINGING ALONG WITH A PROGRAM SOURCE
Operate after setting the MIXING LEVEL control to MIN.
1. Perform the preliminary operations on page 10.
2. Plug a microphone into the MIC jack.
3. Adjust the volume to a suitable level.
4. Set the MIXING LEVEL control to the center position.
   If howling occurs (a high-pitched sound from the speakers), take the following steps.
   (1) Move the microphone away from the speakers.
   (2) Lower the volume.
5. Select the desired program source using the FUNCTION switches.
6. Start playback of the program source.
7. Adjust the overall volume.
8. Using the MIXING LEVEL control, adjust the sound balance between the microphone and the program source.
9. Sing along with the program using the microphone.

*NOTE:*
- *Recording of mixed sound is possible. Although the sound from the speaker during playback of Deck I will be mixed sound, recording to Deck II will be made by tape sound of the Deck I only.*
- *When not using the MIXING function, be sure to set the MIXING LEVEL control to MIN and remove the microphone plug from the MIC jack.*
- *The graphic equalizer does not affect the sound of microphone.*

# REMOTE CONTROL UNIT FACILITIES

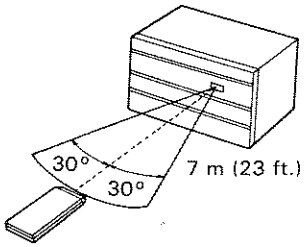
### Range of remote control

When the remote control unit is pointed at the REMOTE SENSOR window on the cassette tape deck receiver and any of its keys is pressed, the cassette tape deck receiver and other components can be operated by remote control.

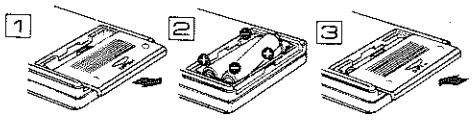
Distance: Within a range of about 7 meters from the REMOTE SENSOR window.

Angle: Within approx. 30 degrees from the center of the REMOTE SENSOR window.

Remote control will not be possible if there is an obstacle between the remote control unit and the REMOTE SENSOR window.




## PUTTING BATTERIES INTO THE REMOTE CONTROL UNIT




[1] Remove the cover of the battery compartment on the reverse side of the remote control unit.

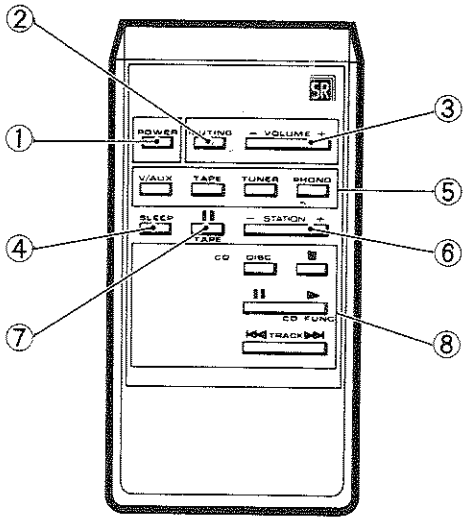
[2] Take out the two size "AAA" [IEC R03 (UM-4)] dry cell batteries supplied and load them into the battery compartment, taking care to follow the markings on the compartment.

[3] Replace the cover of the battery compartment.

### Cautions for handling dry cell batteries.

Misusing dry cell batteries can result in electrolyte leakage or explosions, Bear in mind the following points for getting the most out of your batteries.

- When loading the batteries into the battery compartment, make sure the plus ⊕ and minus ⊖ polarities correspond to the markings on the compartment.
- Even though they may be the same shape, batteries come with different voltage ratings. Do not use different types of batteries together. Use only the same kind of batteries.
- Do not mix up new batteries and used batteries but replace all the batteries at the same time.




### ① POWER key

### ② MUTING key (remote control unit only)

Pressing this key sets the deck into muting mode. In this mode the volume control indicator flashes (located on the volume control).

Pressing this switch again switches the muting mode off, and the indicator stops flashing and lights.

### ③ VOLUME (− : DOWN, + : UP) key

### ④ SLEEP key (remote control unit only)

Pressing this key sets the sleep timer to approximately 60 minutes. The STANDBY/SLEEP indicator flashes while the sleep timer is operating. The SLEEP indicator flashes faster as the end of the set time nears.

### ⑤ FUNCTION selector keys

### ⑥ STATION key

+ (UP) : Used to tune in the station numbers in ascending order.

− (DOWN) : Used to tune in the station numbers in descending order.

### ⑦ TAPE PAUSE (▮▮) key

Use to temporarily stop Deck II. Press again to release the pause.

*NOTE:*

- *The pause function is only for Deck II.*

### ⑧ CD keys

CD FUNC ▶ (Play) . . . . . Function on the amplifier section is set to CD mode.
Begins CD playback.

▮▮ (Pause) . . . Press to temporarily pause playback.

■ (Stop) . . . . Press to stop playback.

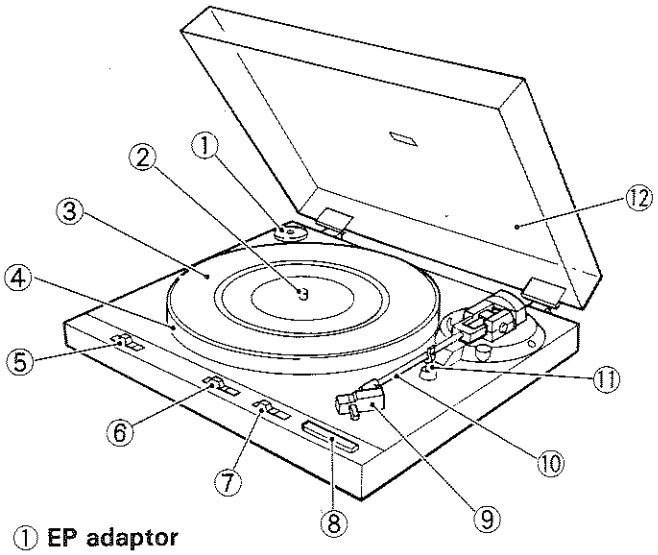
DISC . . . . . Disc numbers can be selected when used together with a Pioneer Multi-play CD player.

▶▶| . . . . . When pressed once, play advances to the beginning of the next track; when pressed continuously, advances to further tracks.
(Track search)

|◀◀ . . . . . When pressed once, play returns to the beginning of the currently playing track; when pressed continuously, returns to earlier tracks.
(Track search)

# TURNTABLE FACILITIES

NOTE:
Illustration shows PL-322Z. PL-222Z are not equipped with disc size switch.




**① EP adaptor**
Place over the platter spindle to play 45 rpm singles.

**② Platter spindle**

**③ Platter mat**

**④ Platter**

**⑤ SPEED switch**
Set this switch in accordance with the speed of the record.
33 : For 33-1/3 rpm records. 45 : For 45 rpm records.

**⑥ ARM ELEVATION switch**
- Use the switch for manual play.
- Use the switch to suspend record play temporarily.
- Use the switch when changing the tracks during actual play.

[UP] : The tonearm rises (the stylus moves away from the record).
[DOWN] : The tonearm descends (the stylus is lowered onto the record).

**⑦ SIZE switch (PL-322Z/PL-322AZ)**
Set this switch in accordance with the size of the record.
30: For 30 cm records. 17: For 17 cm records.

**⑧ STOP switch (PL-222Z)**
Press this switch for stopping play.

**⑧ PLAY/STOP switch (PL-322Z/PL-322AZ)**
Press this switch for stating auto play or for stopping play.
*NOTE:*
*Be sure to press the switch firmly when starting playback: if not pressed firmly, the platter may rotate without the tonearm moving.*

**⑨ Cartridge**

**⑩ Tonearm**

**⑪ Arm rest**

**⑫ Dust cover (PL-222Z/PL-322Z)**

# GRAPHIC EQUALIZER CONTROLS

The tone for the left (L) and right (R) audio channels can be adjusted separately with this graphic equalizer. The advantage of the GRAPHIC EQUALIZER over conventional tone controls is that with the five controls of the GRAPHIC EQUALIZER it is possible to control five different narrow. With conventional tone controls a setting for a bass or treble boost or cut will also affect the lower or upper mid frequencies. The frequency bands controlled by the five slide controls have been chosen to yield the maximum possible control action within the audio spectrum.

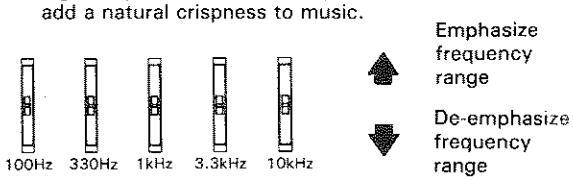
**100 Hz:** The 100 Hz control is very useful for enhancing low bass notes as in organ music.

**330 Hz:** The 330 Hz control will allow you to vary the upper bass frequencies.

**1 kHz:** The 1 kHz control is the presence control and can be used very effectively to emphasize, or de-emphasize vocalists.

**3.3 kHz:** The 3.3 kHz control will add brilliance and clarity to brass instruments and violins.

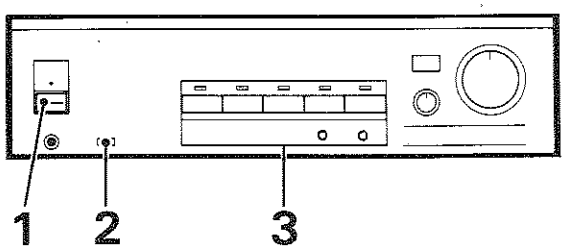
**10 kHz:** The 10 kHz control can be used to make up for missing high frequencies absorbed by the environment and to add a natural crispness to music.




*NOTE:*
*The GRAPHIC EQUALIZER controls function in the modes playback and recording. The GRAPHIC EQUALIZER controls do not function when recording from Deck I to Deck II (including tape copying).*

# PRELIMINARY OPERATIONS

- **PERFORM THE FOLLOWING PROCEDURES BEFORE STARTING ANY OF THE OPERATIONS.**




**1. Press the POWER switch to ON.**
- The STANDBY/SLEEP indicator will go out.

**2. Select the SURROUND & STEREO WIDE switch.**

**3. Select the FUNCTION switches before operating any of the equipment.**
- To listen to a compact disc : [CD]
- To listen to a record : [PHONO]
- To listen to an FM or AM broadcast : [TUNER]
- To listen to a cassette tape : [TAPE]
- To listen to equipment connected to the VIDEO/AUX jacks: [VIDEO/AUX]

When a FUNCTION switch is pressed, the corresponding indicator lights.

### About Back-ups

**1. When the power switch is in the STANDBY position . . .**

When the power is turned on again, the SLEEP TIMER and MUTING will be reset, but all other switch settings will return to the previous settings before entering the standby mode.

**2. When AC power has been cut . . . . . .**

(1) All settings but the SLEEP TIMER and MUTING will be preserved for a several days be the internal back-up function, even if the AC power is cut.

(2) The internal back-up information will be lost after a several days without external power.

# BASIC OPERATIONS

## RECORD PLAY

### Manual play (PL-222Z, PL-322Z, PL-322AZ)

1. Perform the preliminary operations.
2. Place the record on the platter mat.
3. Remove the stylus cover and release the tonearm from the arm rest.
4. Set the SPEED switch.
5. Move the ARM ELEVATION switch to the UP position.
6. Move the tonearm by hand across the record. At this stage, the platter starts to rotate.
7. Move the ARM ELEVATION switch to the DOWN position.
8. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
9. To stop the player, press the STOP (or PLAY/STOP) switch.

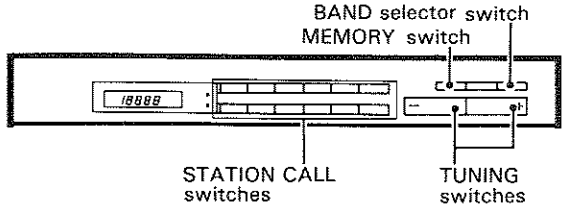
### Auto play (PL-322Z, PL-322AZ)

1. Perform the preliminary operations.
2. Place the record on the platter mat.
3. Remove the stylus cover and release the tonearm from the arm rest.
4. Set the SPEED and SIZE switches.
5. Move the ARM ELEVATION switch to the DOWN position.
6. Push the PLAY/STOP switch to start record play.
7. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
8. To stop the player, press the PLAY/STOP switch.

*NOTE:*

- *When play is completed, the tonearm will return automatically to the arm rest.*
- *When playing 45 rpm records with large center holes, place the EP adaptor onto the platter spindle.*

## LISTENING TO THE BROADCASTS




1. Perform the preliminary operations.
2. Select your desired broadcasting band using the BAND selector switch.
3. Press the TUNING switch to locate the frequency of your desired station.

### Auto tuning:

Press the tuning switch until the frequency starts to change (about 1second), then release it.

The tuner will automatically search for a broadcasting station, and stop when one is found. To search for another station, press again.

- To interrupt auto tuning, press the TUNING switch again.

*NOTE:*

*When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.*

### Manual tuning:

Press and release quickly.

The tuning frequency will change by one step each time the switch is pressed. Press as many times as necessary to tune in the desired station.

- If the switch is held depressed for more than approximately 2 seconds, the reception frequency will change continuously, and stop when the switch is released.

*NOTE:*

*The TUNED indicator will not function for broadcasts received over long distances or when signals are weak.*

4. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.

## PRESETTING STATIONS

### Presetting

From 1 to 24 FM/AM stations can be preset at random. Press the STATION CALL switch once for 1 - 12 (Mode 1) and twice for 13 - 24 (Mode 2).

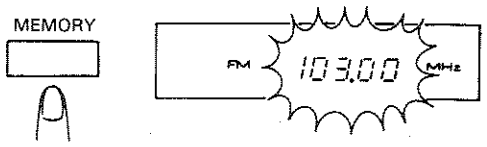
The setting of the FM MONO switch is aiso recorded with the preset station frequency.

**1. Tune in desired station.**

- See "LISTENING TO THE BROADCASTS" section for information on reception.

**2. Press the MEMORY switch.**

- The display will flash (about 5 seconds).

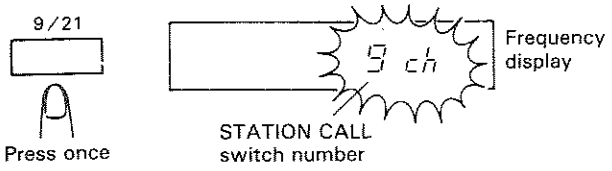



**3. Press one of the STATION CALL switch.**

- While the display is flashing, press the switch corresponding to the station which you wish to preset or re-preset.

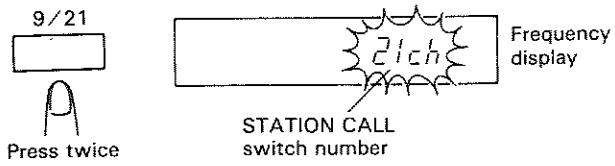
When presetting a station to Mode 1 (e.g. presetting a station to No. 9):

By pressing the STATION CALL 9/21 switch once, the station will be preset to Mode 1.



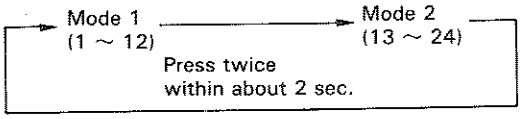

When presetting a station Mode 2 (e.g. presetting a station to No. 21) :

Mode 2 stations are preset by pressing the STATION CALL 9/21 switch twice within about 2 seconds.




- After you press the STATION CALL switch, the display will flash for about 2 seconds, then the station will be memorized. If you press another switch (except the FM MONO switch) while the display is flashing, the station will not be memorized.

Pressing the STATION CALL switch again within about 2 seconds switches alternately between Mode 1 and Mode 2.




## RECEPTION USING PRESET TUNING

The setting of the FM MONO switch will also be recalled along with the preset station frequency.

1. Perform the preliminary operations on page 10.
2. Press the STATION CALL switch into which the desired station has been memorized.
   - To listen to a Mode 1 broadcast, press the switch once, and to listen to a Mode 2 broadcast, press it twice.

   In this way, simple and accurate reception of any desired station is possible.

*NOTE:*

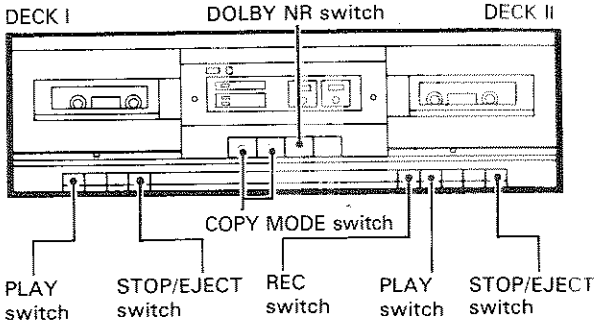
- *The contents of the STATION CALL switches will be preserved for several days, even if the power cord is unplugged.*
- *If a preset station has been erased, re-preset it.*

### Last Station Memory

- When the POWER switch is pressed to turn power on, the last station received before the power was previously turned STANDBY mode will be received again.
- When power is ON, if the BAND selector switch is pressed, the last station received before the BAND selector switch was previously pressed will be received again.

## TAPE PLAYBACK

Confirm that the SYNCHRO COPY indicators are off. If blinking, cancel the synchro copy mode.




### Single Playback (a function of both Decks I and II)

When the copy mode indicator (NORMAL SPEED COPY or HIGH SPEED COPY) flashes, press the copy switch (NORMAL or HIGH). The flashing stops.

1. Perform the preliminary operations on page 10.
2. Press the STOP/EJECT switch and load a pre-recorded cassette tape then close the cassette door.
   Set the COPY MODE switches to the OFF position.
3. Select the DOLBY NR switch.
4. Press the PLAY (▶) switch.
   - Press the PLAY (▶) switch of the deck into which the cassette tape is loadad.
5. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
6. To stop playback, press the STOP/EJECT switch.

### Relay Playback (Continuous playback Deck I → Deck II, or Deck II → Deck I)

- A deck will enter the standby mode if its PLAY switch is pressed while the other deck is in the play mode.
  When the deck presently playing is stopped, the deck in the standby mode will automatically enter the play mode for relay play.
- While the second tape is playing, a new tape can be replaced in the first deck in order to perform continuous playback of different tapes. This is a convenient feature for party background music, etc.

1. Perform the preliminary operations on page 10.
2. Load pre-recorded cassette tapes into both Deck I and Deck II. (Press the STOP/EJECT switch and load the cassettes.) Close the cassette doors.
   Set the COPY MODE switches to the OFF position.
3. Select the DOLBY NR switch.
4. When Deck II is in the pause mode (the PAUSE indicator is lit), pressing the PAUSE switch will cancel the pause mode.
5. Press the PLAY (▶) switch for the deck you wish to begin playing first, then press the PLAY (▶) switch for the other deck.
   - When the tape which is playing back reaches the end and automatically stops, the other deck automatically starts playback.
   - The opposite deck will begin playback when the STOP/EJECT (■/⏏) switch is pressed on the currently playing deck.
6. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.
7. To stop playback, press the STOP/EJECT switches.

*NOTE:*

- *During relay play (the PLAY switch on both decks is pressed), Deck I will start first when power is turned on.*
- *In all other cases, the deck whose PLAY switch you press first will begin playback first. Playback order will override the settings of the PAUSE switches. This means that if you press the PLAY switch on DECK II when it is in the pause mode then press the PLAY switch on DECK I, DECK I will not start playback. To start playback, press the PAUSE switch on DECK II to cancel the pause mode.*

## TAPE RECORDING (A Function of Deck II Only)

1. Perform the preliminary operations on page 10.
   - Select the recording source with the FUNCTION switch.
2. Press the STOP/EJECT switch and load the cassette tape to be used for recording into Deck II. Close the cassette door.
3. Select the DOLBY NR switch.
4. Press the PAUSE switch to put DECK II into the pause mode.
5. Hold down the REC (●) switch first and then press the PLAY (▶) switch.
   - The REC indicator will light.
6. Start playback of the source to be recorded.
   - When recording from Deck I to Deck II, start playback of Deck I after loading the cassette tape. (See "TAPE COPYING" for details on tape copying.)
7. Press the PAUSE switch again to cancel the pause mode on Deck II.

*NOTE :*

- *Tape recording is unaffected by settings of the VOLUME and MUTING.*
  *The GRAPHIC EQUALIZER controls do not function when recording from Deck I to Deck II (including tape copying).*
- *Beat may occur and be included in recordings when recording AM broadcasts. In such cases, set the BEAT CUT switch on the rear panel to the side where beat is less.*

8. To stop recording, press the STOP/EJECT switch.

### Erasing the tape (function of Deck II only)

When recording on a previously recorded tape, the previously recorded sounds will be erased and new recording entered on the tape. To erase a previously recorded tape without recording anew, perform the following operations.

1. Load the cassette tape into Deck II.
2. Set Deck I to the stop mode.
3. Use the FUNCTION switch to set to TAPE.
4. Hold down the REC (●) switch first and then press the PLAY (▶) switch to start erasing.
   - Press the STOP/EJECT switch to stop erasing at any time.

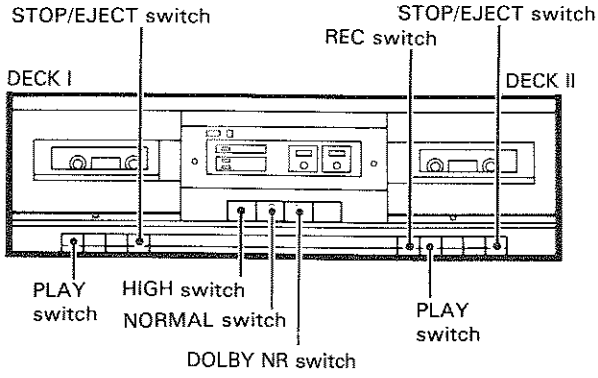
## AUTO-STOP MECHANISM (The Function of both Decks I and II)

When the tape is fully wound onto right reel during recording or playback, the auto-stop mechanism is activated without the STOP/EJECT switch having to be pressed, and the tape will automatically stop.

# TAPE COPYING

Tape copying is accomplished by playing back the original on Deck I and recording on Deck II. (Note that the reverse is not possible.)
If a tape recorded using Dolby NR is copied, the copy as well will have the same noise-reduction characteristics. When copying a tape not recorded with Dolby NR, Dolby NR is off regardless of the setting of the Dolby NR switch.

- Tape copying with added graphic equalizer effects is not possible.




## NORMAL/HIGH SPEED COPYING

1. Perform the preliminary operations on page 10.
2. Press the STOP/EJECT switch, then load the original cassette tape into Deck I and the cassette tape to be used for recording into Deck II. Close the cassette doors.

(3. Use the FUNCTION switch to set to TAPE.)

- Tape copying is possible regardless of the FUNCTION switch setting. However, the sound from the speakers will be that of the program source selected.

4. Select the synchro copy mode.
   **(NORMAL SPEED COPYING)**
   Press the NORMAL SPEED switch of the COPY MODE switches.
   - The NORMAL COPY indicator will flash.

   **(HIGH SPEED COPYING)**
   Press the HIGH switch of the COPY MODE switches.
   - The HIGH SPEED COPY indicator will flash.

*NOTE:*

- *Both decks must be stopped in order to begin copying in the copy mode.*
- *If the PAUSE switch on Deck II is ON, it will be set to OFF automatically when the COPY MODE switch is set to ON.*

5. Hold down the REC (●) switch and then press the PLAY (▶) switch of Deck II.
   - The REC indicator will light.
   - The tape will remain stopped.

*NOTE:*
*Check that the COPY MODE indicator for the selected copy mode (NORMAL SPEED COPY or HIGH SPEED COPY) is flashing.*
*If not flashed, the tape cannot be copied so press the STOP/EJECT switch, return to item 4 and repeat the operation.*

6. Press the PLAY (▶) switch of Deck I.
   - Deck I will start playing back and Deck II will start recording.
   - The COPY MODE indicator (NORMAL SPEED COPY or HIGH SPEED COPY) will light.
   - Tape copying is unaffected by the volume and graphic equalizer settings.
   - When setting the FUNCTION switch to TAPE and listening to playback from Deck I, set the volume and graphic equalizer controls.

When Deck I or Deck II is stopped while copying, restart from step 5. If both decks stop during copying, restart from step 5.
To cancel copying, press the STOP/EJECT switch (■/▲) on both decks, then press the COPY switch again so that the COPY MODE indicator goes off.

*NOTE:*

- *Steps 5 and 6 can also be performed in the reverse order.*
- *Deck II will not enter the pause mode during copying (COPY MODE indicator lit) or during copy standby (COPY MODE indicator blinking).*
- *If no copy is performed, make sure to cancel the copy mode.*
- *When using in the same room as a television set, position for enough away from the set to avoid interference, or turn off power to the television set.*
- *Beat may occur and be included in recordings when copying while receiving AM broadcasts. In such cases, set the BEAT CUT switch on the rear panel to the side where beat is less. There is no need to operate the BEAT CUT switch except for AM broadcasts.*

# RECORDING AND PLAYBACK USING THE OPTIONAL AUDIO TIMER

Operations will vary according to the audio timer used. For details, see the operating instructions supplied with the optional audio timer.

Be sure that the pause mode is not set when making timer settings. If it is, cancel the pause mode before proceeding. Also, confirm that the deck is not in the tape copy mode.

## UNATTENDED RECORDING (Deck II only)

1. Set the POWER switch to the standby position and connect the power cord to the outlet on the optional audio timer.
2. Set the POWER switch to ON.
3. Load a tape for recording in the Deck II.
4. Select the DOLBY NR switch.
   Set the PAUSE (▮▮) and COPY MODE switches to the OFF position.
5. Press the TUNER FUNCTION switch and tune in the station to be preset.
6. Turn down the volume control to minimum position.
7. Set the optional audio timer so that the power comes on at the desired time. (POWER to the components should be off at this point.)
8. Hold down the REC (●) switch and then press the PLAY (▶) switch of Deck II.

Power will be turned on automatically at the preset time of the optional audio timer, and recording will start.

## WAKE-UP PLAYBACK (DECK I and II)

1. Set the POWER switch to the standby position and connect the power cord to the outlet on the audio timer.
2. Set the POWER switch to ON.
3. Select the DOLBY NR switch.
   Set the PAUSE (▮▮) and COPY MODE switches to the OFF position.
4. Adjust the volume control to produce the level of volume required when timer playback starts.
5. Press the TAPE FUNCTION switch. Load the tape which is to be played back.
6. Set the time on the optional audio timer so that the power comes on at the desired time. (Power to the cassette deck receiver should be off at this point.)
7. Press the PLAY (▶) switch.

   At the preset time, the power is switched on and the playback starts automatically.

   Depress both PLAY (▶) switches (Deck I and Deck II). At the preset time, the POWER is switched on and the relay playback starts automatically.

# MAINTENANCE

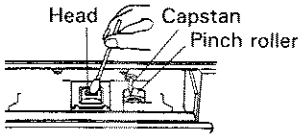
## CLEANING THE HEAD SECTION

The heads, capstan and pinch roller are parts which are liable to get dirty quite easily. In particular, if the heads are dirty, the high frequency components of the sound will not be reproduced and the stereo balance will be impaired, resulting in a deterioration in sound quality. It is therefore recommended that the head section be cleaned regularly.

1. Press the STOP/EJECT switch to open the cassette door.
2. Dip a cleaning swab into the cleaning fluid and use it to wipe the heads, capstan, and pinch roller.

*NOTE :*

- *Clean the head as shown in the drawing.*




## DEMAGNETIZING THE HEAD

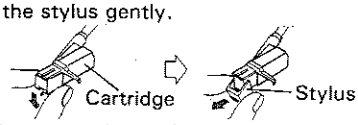
The head becomes magnetized when you use the tape deck for prolonged periods of time. This results in noise being generated and the treble dropping off during recording and playback. The head should therefore be demagnetized regularly with a head demagnetizer (sold separately). For further details, refer to the operating instructions accompanying your head demagnetizer.

*NOTE:*

- *Do not hold screwdrivers, metal objects, or magnets close to the heads.*
- *When demagnetizing the heads, be sure the unit's POWER switch is to the standby position.*

## REPLACING THE STYLUS

1. Remove the stylus gently.




2. Attach the new stylus to the cartridge.

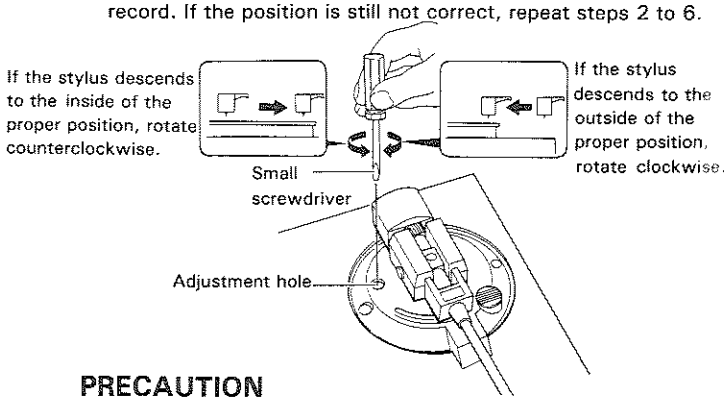
*NOTE:*

- *The service life of the stylus on the supplied cartridge ranges from 800 to 1,000 hours. However, the stylus may need to be replaced earlier depending on the way it is used.*
- *Using a worn or damaged stylus can damage your records and distort the sound reproduction. Remember to replace the stylus at the earliest possible date.*
- *Always use the PIONEER "PN-240" as a replacement stylus.*
- *Always ask for a genuine PIONEER replacement stylus.*

## ADJUSTING THE STYLUS DESCENT POSITION (PL-322Z, PL-322AZ)

Proceed as follows when the stylus does not descend at the proper position on the record during auto play. While performing the adjustment, take care not to scratch the record with the stylus.

1. Place a 30 cm LP record on the platter.
2. Push the PLAY/STOP switch to start auto play.
   Check the direction and amount of stylus deviation (how many millimeters toward the inside or outside of the record's lead-in groove).
3. Push the PLAY/STOP switch to return the tonearm to the arm rest.
4. Set the ARM ELEVATION switch to the UP position and manually move the tonearm across the outside edge of the record.
5. Rotate the screw with a small screwdriver in accordance with the direction of the deviation observed in step 2.
   - Rotate the screw clockwise if the stylus descends to the outside of the proper position.
   - Rotate the screw counterclockwise if the stylus descends to the inside of the proper position.
6. Manually return the tonearm to the arm rest and set the ARM ELEVATION switch to the DOWN position.
7. Push the PLAY/STOP switch and check that the stylus stops at the lead-in groove on the outer circumference of the record. If the position is still not correct, repeat steps 2 to 6.


If the stylus descends to the inside of the proper position, rotate counterclockwise.
If the stylus descends to the outside of the proper position, rotate clockwise.
Small screwdriver
Adjustment hole

## PRECAUTION

If the turntable is mounted directly on or against a speaker, the vibration from the speaker will be transported to the tonearm's cartridge, thus causing feedback howling. Be sure that speakers are mounted sufficiently separated from the turntable.

# TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.
This unit is controlled by an internal microprocessor. If any of the switches fail to respond, disconnect the AC power by unplugging the unit, wait for more than 5 seconds, and then plug the unit in again.

## Amplifier section

| Symptom | Cause | Remedy |
|---|---|---|
| **No sound from speakers.** | • Is volume level turned down?<br>• Is Muting on?<br>• Are headphones connected to the PHONES jack? | • Increase volume level.<br>• Press the MUTING key on the remote control unit to cancel muting.<br>• Disconnect the headphones. |

## Cassette tape deck section

| Symptom | Cause | Remedy |
|---|---|---|
| **Tape deck will not work.** | • Is the deck in the copy standby mode?<br>• Is deck in pause mode?<br>• Is tape loaded correctly?<br>• Is the COPY MODE switch turned on? | • Cancel the copy mode.<br>• Press PAUSE switch to release pause mode.<br>• Load correctly.<br>• Turn off the COPY MODE switch. |
| **No Sound from tape deck.** | • Is TAPE FUNCTION switch selected?<br>• Is a blank tape loaded?<br>• Are heads clean? | • Press TAPE FUNCTION switch.<br>• Load a pre-recorded tape.<br>• Clean heads. |
| **Recording not possible.** | • Is tape loaded in Deck I ?<br>• Are heads clean?<br>• Is a tab on the cassette tape removed? | • Load tape in Deck II for recording.<br>• Clean heads.<br>• Use a cassette tape with tabs, or place a piece of adhesive tape on the back edge (see page 17). |
| **Copying not possible** | • Is tab on the cassette tape removed? | • Use a cassette tape with tabs, or place a piece of adhesive tape on the back edge (see page 17). |
| **High frequency sounds not reproduced.** | • Is a tape not recorded with Dolby NR system being played back with the Dolby NR system on? | • Turn off the Dolby NR system. |
| **Hight frequencies overemphasized.** | • Is a Dolby NR tape being played back with the Dolby NR system off? | • Turn on the Dolby NR system. |
| **Noise picked up during recording of tape, record, radio, etc.** | • Is power to TV set turned on?<br>• Is unit located too close to TV set?<br>• Did you try operating the BEAT CUT switch (for AM broadcasts only)? | • Turn off TV set.<br>• Move unit at least 30 cm from TV set.<br>• Set the BEAT CUT switch on the rear panel to the side where noise is less. |

## Tuner section

| Symptom | Cause | Remedy |
|---|---|---|
| **No sound.** | • Is TUNER FUNCTION switch selected? | • Press TUNER FUNCTION switch. |
| **AM reception not possible.** | • Is loop antenna connected?<br>• Is BAND selector switch set to AM?<br>• Is station tuned in properly? | • Connect loop antenna.<br>• Press the BAND selector switch for AM.<br>• Tune in station properly. |
| **FM reception not possible.** | • Is antenna connected?<br>• Is BAND selector switch set to FM? | • Connect antenna, following instructions on page 3, 4, 5.<br>• Press the BAND selector switch for FM. |
| **Large amount of noise** | • Are radio waves weak, causing antenna input to be insufficient? | • Switch OFF the CD player. |

## Turntable

| Symptom | Cause | Remedy |
|---|---|---|
| **Turntable does not work.** | • Is drive belt properly attached? | • Attach belt correctly. |
| **No sound.** | • Is PHONO FUNCTION switch selected? | • Press PHONO FUNCTION switch. |
| **Static, scratching noise produced.** | • Is record surface dirty?<br>• Is record warped or scratched? | • Clean record.<br>• Replace record. |
| **Stylus does not descend at correct position. (PL-322Z , PL-322AZ)** | • Is descend position set correctly?<br>• Is record a special color or size? | • Adjust descend position as explained on page 14.<br>• Change record or play back manually. |

## Remote Control Unit

| Symptom | Cause | Remedy |
|---|---|---|
| **Remote control operation is not possible.** | • Battery is not installed in remote control unit.<br>• Battery is dead.<br>• Remote control cord is not connected. | • Insert battery.<br>• Insert a new battery.<br>• Correctly connect remote control cord. |

# SPECIFICATIONS

## Amplifier Section

**Continuous Average Power Output is 36 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09%** total harmonic distortion.**

Music power (both channel driven)
.....100 W + 100 W (1 kHz, T.H.D. 10 %, 8 Ω)
Peak music power.....400 W

Signal-to-Noise Ratio (IHF, short-circuited, A network)
PHONO MM.....72 dB
CD, VIDEO/AUX.....90 dB
Input (Sensitivity/impedance)
PHONO MM..... 2.5 mV/47 kΩ
CD, VIDEO/AUX.....150 mV/47 kΩ
MIC.....0.6 mV/10 kΩ
Frequency Response
PHONO MM . . . . . 20 Hz to 20,000 Hz±2 dB
CD, VIDEO/AUX . . . . . 20 Hz to 50,000 Hz±3 dB
Graphic Equalizer frequency band
. . . . . 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*
** *Mesured by Audio Spectrum Analizer.*

## FM Tuner Section

Frequency range . . . . . 87.5 MHz to 108 MHz
Usable Sensitivity . . . . . 14.2dBf, IHF (1.4 μV/75 ohms)
50 dB Quieting Sensitivity . . . Mono: 20 dBf (2.7 μV/75 ohms )
Stereo Separation . . . . . 43 dB(1 kHz)
Frequency Response . . . . . $^{+1.0}_{-1.5}$ dB (20 Hz to 15 kHz)
Antenna Input . . . . . 75Ω unbalanced
300Ω balanced

## AM Tuner Section

Frequency range
When 10 kHz step . . . . . 530 kHz to 1,600 kHz
When 9 kHz step . . . . . 531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna) . . . . . 385μV/m
Antenna . . . . . Loop Antenna

## Cassette Tape Deck Section

Systems . . . . . 4 track, 2-channel stereo
Heads . . . . . Recording/playback head × 1
Playback head × 1
Erasing head × 1
Motor . . . . . DC servo 2 speed motor × 2
Wow and Flutter . . . . . No more than 0.15% (WRMS)
Fast Winding Time . . . . . Approximately 105 seconds (C-60 tape)
Frequency Response
−20 dB recording:
Normal tape . . . . . 35 Hz to 14,000 Hz ± 6 dB
$CrO_2$ . . . . . 35 Hz to 15,000 Hz ± 6 dB
Signal-to-Noise Ratio
Dolby NR OFF . . . . . 50 dB
Noise Reduction Effect
Dolby B type NR ON . . . . . More than 10 dB (at 5 kHz)

## Miscellaneous

Power requirements
. . . . . AC 110 V/120−127 V/220 V/240 V (switchable), 50/60 Hz
Power Consumption . . . . . 390 W
Dimensions . . . . . 420(W) × 349.5(H) × 303(D) mm
16-9/16(W) × 13-3/4(H) × 11-15/16(D) in
Weight (without package) . . . . . 8.2 kg (18 lb 1 oz)

## Furnished Parts

FM T-type Antenna . . . . . 1
AM Loop Antenna . . . . . 1
Operating Instructions . . . . . 1
Remote control unit . . . . . 1
Dry cell batteries [AAA(R03)] . . . . . 2

## Turntable [PL-222Z/PL-322Z]

### Motor, Platter

Motor Type . . . . . DC servo motor
Drive Method . . . . . belt drive
Speed . . . . . 33-1/3, 45 RPM
Speed Variation . . . . . 0.07% WRMS(JIS) ±0.10% WTD Peak (DIN)
Signal-to-Noise Ratio . . . . . 68 dB (DIN-B)
Platter . . . . . 295 mm dia., aluminum die-cast

### Tonearm

Type . . . . . Static balance straight pipe arm

### Installed Cartridge

Type . . . . . MM type
Replacement stylus . . . . . PN-240
Stylus . . . . . 0.6 mil diamond
Output voltage 2.5 mV (1kHz, 5cm/s, Lat. peak)
Tracking Force . . . . . 1.5−2.5 g (optimum 2.0 g)
Frequency Response . . . . . 10 Hz to 30,000 Hz
Load Resistance . . . . . 47 kΩ
Cartridge Weight . . . . . 5 g

### Other

Dimensions
PL-222Z/PL-322Z . . . . . 420(W) × 95(H) × 356(D) mm
16-9/16(W) × 3-3/4(H) × 14(D) in
PL-322AZ..... 420(W) × 86.5(H) × 356(D) mm
16-9/16(W) × 3-3/8(H) × 14(D) in
Weight
PL-222Z/PL-322Z.....2.7 kg (5 lb 15 oz)
PL-322AZ .....2.1 kg (4 lb 10 oz)

## Accessories

EP Adaptor . . . . . 1

*NOTE:*
*Specifications and the design subject to possible modifications without notice due to improvements.*

## POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

# HOW TO HANDLE CASSETTE TAPES

## Bear in mind the following points before loading cassette tapes.

### Is the tape loose, or is some of the tape outside the cassette?

If some of the tape is projecting outside the cassette shell or if it is loose, it may not enter between the capstan and pinch roller. This will prevent the tape from being supplied or damage the tape itself. In cases like these, insert a pencil into the reel hole and take up the slack. (Fig. A)

Some cassette tapes come with a plastic or thick paper stopper which prevents tape slack. Remove this stopper when loading the tape and replace it after having used the cassette.

### What are the accidental erasure prevention tabs for?

A cassette is provided with these tabs so that important or otherwise valuable recordings will not be erased accidentally. When the tab (Fig. B) on the cassette shell is broken out with the tip of a screwdriver, it will not be possible to activate the recording function even by pressing the recording (REC) switch, so valuable recordings will not be erased in error.

To re-record on a cassette whose tabs have been broken out, simply apply a piece of adhesive tape twice over the tab areas, as shown in Fig. C.

*NOTE:*

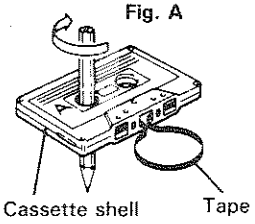
*The accidental erasure prevention tabs are located at the top left on both sides A and B (1 and 2), so that material on each side can be prevented from being erased in error.*

### Tips on using cassette tapes

- Leader tape (which does not allow sound to be recorded over it) is provided at the beginning of a cassette tape. Start recording after allowing the tape to run for about 5 seconds so that the leader tape clears the recording head.
- Do not leave a cassette tape exposed to the environment. Store the cassette in its case so that dust and dirt do not adhere to the tape after use, and so that the tape is prevented from becoming slack. Choose a location which is not exposed to the effects of magnetism, dust, dirt and oil for storing the tapes.
- Because C-120 tapes are so thin, they easily jam in the pinch roller and capstan, and they are susceptible to other trouble such as irregular winding. Try not to use them with this unit. Use tapes of 90 minutes or less.

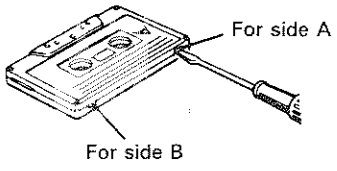
How to take up tape slack

Fig. A



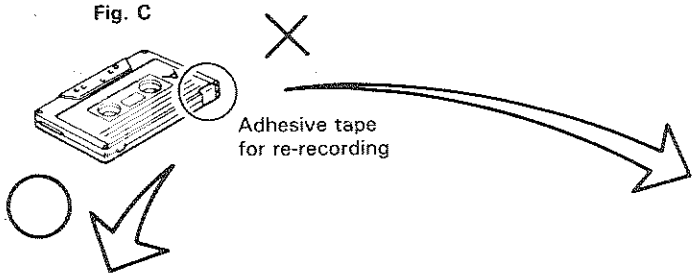

How to prevent already recorded tapes from being erased

Fig. B



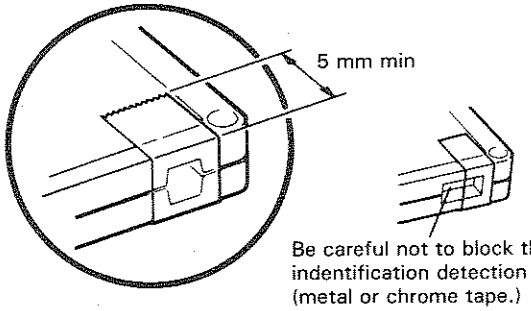

## NOTE FOR RE-RECORDING ON A CASSETTE TAPE WHICH HAS A BROKEN TAB

Fig. C




### CORRECT METHOD OF APPLYING TAPE

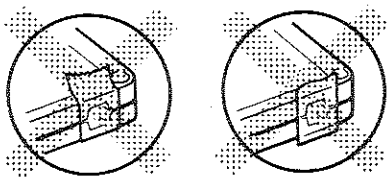
- Apply two layers of adhesive tape.
- Apply the tape taut so that it does not rise up.




Be careful not to block the tape indentification detection hole (metal or chrome tape.)

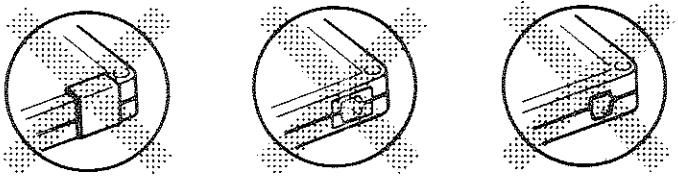
### INCORRECT METHOD OF APPLYING TAPE

### THIS MAY RESULT IN AN ACCIDENT



Curled tape

Protruding tape



Applied vinyl tape, gum tape, or other tape other than cellophane tape.

Applied to top portion only.

Insertion of an eraser, or the like.

After removing the adhesive tape, completely wipe away all traces of paste. Use only alcohol or benzine.

Published by Pioneer Electronic Corporation.
Copyright © 1989 Pioneer Electronic Corporation.
All rights reserved.

Published by Pioneer Electronic Corporation.
Copyright © 1989 Pioneer Electronic Corporation.
All rights reserved.

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
**PIONEER ELECTRONICS [USA] INC.** 2265 East 220th Street, Long Beach, California 90810, U.S.A.
P.O. BOX 1720, Long Beach, California 90801, U.S.A.
**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 8E3, Canada
**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium, TEL: 03/750.05.11
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia, TEL: [03] 580-9911
**PIONEER INTERNATIONAL INC.** Mita Kokusai Bldg. 4-28, Mita 1-Chome, Minato-ku, Tokyo 108, Japan

<89H02FF5C02>

Printed in Japan <ARE1133-A>